

NEEDLE CANNULA REMOVAL BY EXTRACTION**ABSTRACT OF THE DISCLOSURE**

In a needle cannula extraction device, an engagement stroke moves one engagement member toward another engagement member so as to first engage a needle cannula inserted therebetween. Movement of at least one of the engagement members during a subsequent extraction stroke maintains a generally constant spacing between the engagement members that generally corresponds to a thickness of the needle. The extraction stroke pulls the needle cannula from its hub or other attachment structure, which is held in position. In first and second embodiments, the two engagement members first come together to grip the cannula, and then move together as a unit (with the engaged needle cannula) away from the retained attachment structure. In third and fourth embodiments, a first engagement member is pivotable toward a second engagement member, provided in the form of a backing member, and then away from the retained attachment structure. Either one of the engagement members may be mounted for translational movement away from the other, and spring biased, in such a manner as to maintain the generally constant spacing between the engagement members during the extraction stroke. By maintaining a generally constant spacing between the engagement members which corresponds to the thickness of the needle cannulas to be engaged, needle cannulas within a range of thicknesses can be reliably gripped and extracted.

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